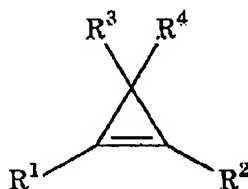3

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the

Application.

5   **Listing of Claims**

1. (Currently Amended) A compound of the formula:

wherein:

a)   one of R^1 and R^3 is H and R^2, R^4; and the other of R^1 and R^3 are independently

10   selected from H and a group of the formula:
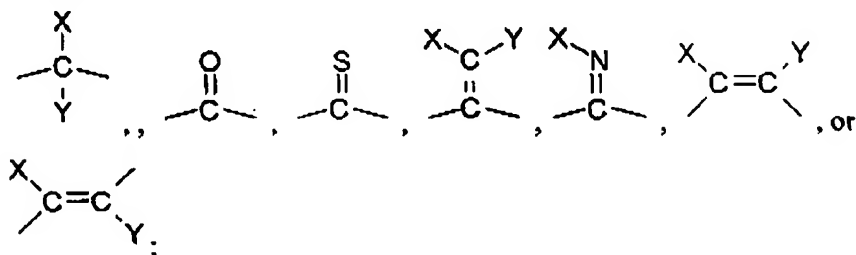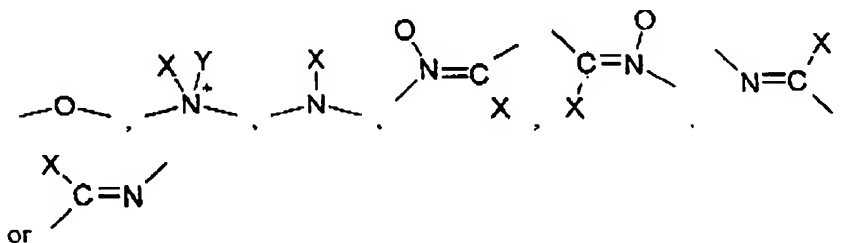
$$-(L)_n-Z$$

wherein:

i)   n is an integer from 1 to 12;

ii)   each L is independently selected from a member of the group D1, D2, E, or
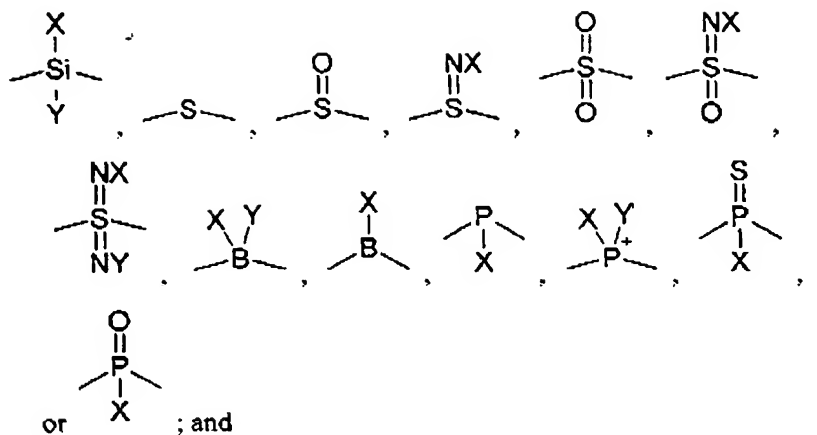
15   J wherein:

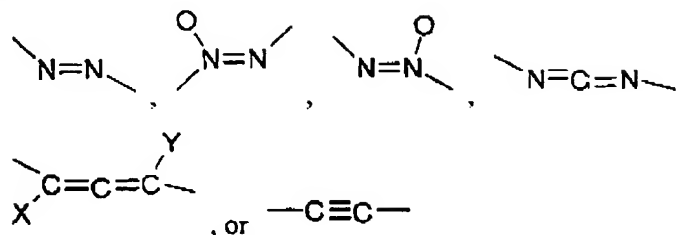D1 is of the formula:

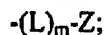D2 is of the formula:

E is of the formula:

4

or ; and

J is of the formula:

, or

wherein:

A) each X and Y is independently a group of the formula:

$-(L)_m-Z;$

and

B) m is an integer from 0 to 8; and

C) no more than two D2 or E groups are adjacent to each other and no

J groups are adjacent to each other;

iii) each Z is independently selected from:

A) hydrogen, halo, cyano, nitro, nitroso, azido, chlorate, bromate, iodate,

isocyanato, isocyanido, isothiocyanato, pentafluorothio, or

B) a group G, wherein G is an unsubstituted or substituted; unsaturated,

partially saturated, or saturated; monocyclic, bicyclic, tricyclic, or

fused; 4 to 14 membered carbocyclic or heterocyclic ring system

wherein;

1) when the ring system contains a 4 membered heterocyclic ring, the

heterocyclic ring contains 1 heteroatom;

5

2) when the ring system contains a 5, or more, membered heterocyclic ring or a polycyclic heterocyclic ring, the heterocyclic or polycyclic heterocyclic ring contains from 1 to 4 heteroatoms;

3) each heteroatom is independently selected from N, O, and S;

5   4) the number of substituents is from 0 to 5 and each substituent is independently selected from X;

b) the total number of non-hydrogen atoms in each compound is 50 or less; and

c) the total number of heteroatoms in $-(L)_n-Z$ is from 0 to 4; and

d) either;

10   i) R^1 or R^3 contains at least one group G; or

ii) at least one L group is an E group; or

iii) at least one of R^1, R^2, R^3, and R^4 contains one to four non-hydrogen atoms and at least one of R^1, R^2, R^3, and R^4 contains more than four non-hydrogen atoms; ____

15   and its enantiomers, stereoisomers, salts, and mixtures thereof;

or a composition thereof;

provided that:

a) $-(L)_n-Z$ is other than trimethylsilyl, trimethylsilylsulfonyl or thiol; and

b) R^1 is other than phenylsulfonyl, phenylthioethyl, diphenylhydroxymethyl,

20   benzo[g]quinolin-7-ol-1-methyl, a malonate derivative, a substituted 3-aminocyclohexenone, a dialkoxybenzylaminocarbonyl; and

c) R^3 is other than 2-phenyl-ethenyl, phenylthio, (4-bromo-2-methylphenyl)carbamic acid N-carbonyl, (4-bromo-2-methylphenyl)carbamic acid ethyl ester N-carbonyl, a malonate derivative, aryloxy, or a

25   dialkoxybenzylaminecarbonyl.

2. (Currently Amended) A method of inhibiting an ethylene response in a plant comprising the step of contacting the plant with an effective ethylene response-inhibiting amount of a cyclopropene derivative of the formula:
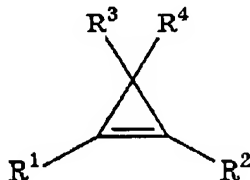
6

wherein:

   a) one of R^1 and R^3 is H and R^2, R^4; and the other of R^1 and R^3 are independently selected from H and a group of the formula:

$$-(L)_n-Z$$
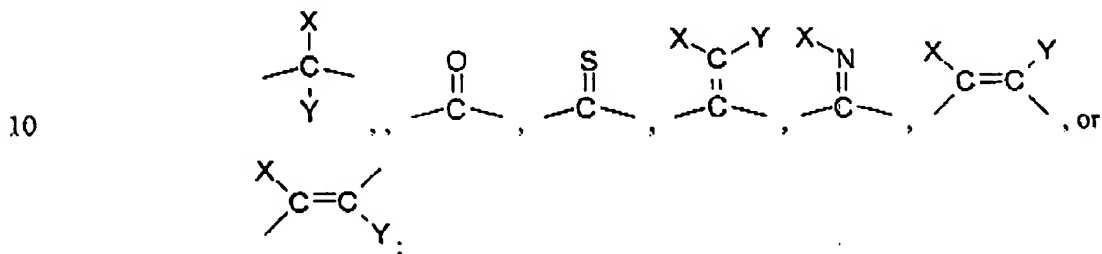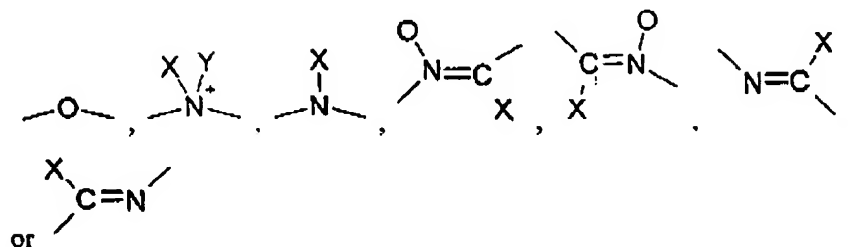
wherein:

   i) n is an integer from [[1]] 0 to 12;

   ii) each L is independently selected from a member of the group D1, D2, E, or J wherein:

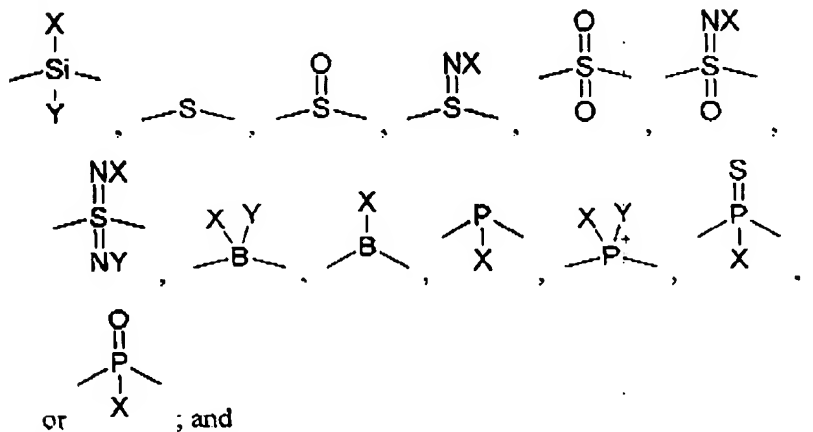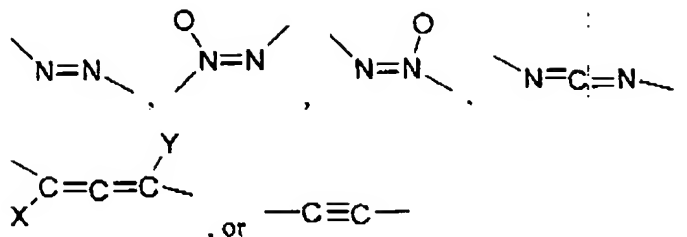   D1 is of the formula:

   D2 is of the formula:
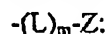

   E is of the formula:

   ; and

   J is of the formula:

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$$\text{N=N} \qquad \text{N=N} \qquad \text{N=N} \qquad \text{N=C=N}$$

$$\underset{X}{\text{C=C=C}} \underset{Y}{\qquad} , \text{or} \quad -\text{C}\equiv\text{C}-$$

wherein:

A) each X and Y is independently a group of the formula:

$$-(L)_m-Z;$$

and

B) m is an integer from 0 to 8; and

C) no more than two D2 or E groups are adjacent to each other and no J groups are adjacent to each other;

iii) each Z is independently selected from:

A) hydrogen, halo, cyano, nitro, nitroso. azido, chlorate, bromate, iodate, isocyanato, isocyanido, isothiocyanato, pentafluorothio, or

B) a group G, wherein G is an unsubstituted or substituted; unsaturated, partially saturated, or saturated; monocyclic, bicyclic, tricyclic, or fused; [[4]] 3 to 14 membered carbocyclic or heterocyclic ring system wherein;

1) when the ring system contains a 3 or 4 membered heterocyclic ring, the heterocyclic ring contains 1 heteroatom;

2) when the ring system contains a 5, or more membered heterocyclic ring or a polycyclic heterocyclic ring, the heterocyclic or polycyclic heterocyclic ring contains from 1 to 4 heteroatoms;

3) each heteroatom is independently selected from N, O, and S;

4) the number of substituents is from 0 to 5 and each substituent is independently selected from X;

b) the total number of non-hydrogen atoms in each compound is 50 or less; and

c) the total number of heteroatoms in $-(L)_n-Z$ is from 0 to 4; and

d) either;

i) R^1 or R^3 contains at least one group G; or

ii) at least one L group is an E group; or

8

iii) at least one of R^1, R^2, R^3, and R^4 contains one to four non-hydrogen

atoms and at least one of R^1, R^2, R^3, and R^4 contains more than four non-

hydrogen atoms; ____

and its enantiomers, stereoisomers, salts, and mixtures thereof;

5   or a composition thereof;

3. (Original) The method of claim 2, wherein the ethylene response is one or more of
ripening or senescence of flowers, fruits, and vegetables; abscission of foliage, flowers,
and fruit; the shortening of life of ornamental plants, cut flowers, shrubbery, seeds, or
dormant seedlings; inhibition of growth; stimulation of growth; auxin activity; inhibition

10   of terminal growth; control of apical dominance; increase in branching; increase in
tillering; changing the morphology of plants, modifying the susceptibility to plant
pathogens such as fungi, changing bio-chemical compositions; abortion or inhibition of
flowering or seed development; lodging effects; stimulation of seed germination; breaking
of dormancy; hormone effects; and epinasty effects.

15   4. (Original) The method of claim 2, wherein R^2, R^3, and R^4 are hydrogen or R^1, R^2, and R^3
are hydrogen.

5. (Original) The method of claim 2, wherein n is from 1 to 7.

6. (Original) The method of claim 2, wherein m is from 0 to 2.

7. (Original) The method of claim 2, wherein:

20   a) each D1 is -CXY-, -CO-, or -CS-;

b) each D2 is -NX- or -O-;

c) each E is -S-, -SiXY-, or -SO$_2$-;

d) each X and Y is independently H, halo, OH, SH, -C(O)(C$_1$-C$_4$)alkyl,
-C(O)O(C$_1$-C$_4$)alkyl, -O-(C$_1$-C$_4$)alkyl, -S-(C$_1$-C$_4$)alkyl, or substituted or unsubstituted

25   (C$_1$-C$_4$)alkyl; and

e) each Z is independently H, halo, or G.

8. (Original) The method of claim 2, wherein each G is independently a substituted or
unsubstituted; five, six, or seven membered; aryl, heteroaryl, heterocyclyl, or cycloalkyl
ring.

30   9. (Original) The method of claim 8, wherein each G is independently a substituted or
unsubstituted phenyl, pyridyl, cyclohexyl, cyclopentyl, pyrolyl, furyl, thiophenyl, triazolyl,
pyrazolyl, 1,3-dioxolanyl, or morpholinyl.

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10.(Original) The method of claim 8, wherein the substituents, when present, are independently selected from 1 to 3 of methyl, methoxy, and halo.